

What is claimed is:

1. (Currently Amended) A thermoplastic vulcanizate elastomer
comprising polypropylene and EPDM prepared using a catalyst system
5 comprising:
 - at least one non-brominated phenolic resin;
 - at least one non-transition metal halide wherein the halide
comprises magnesium chloride, calcium chloride, sodium chloride, potassium
chloride, or combinations thereof;
 - 10 at least one acid selected from the group consisting of oxalic
acid, citric acid, ~~stearic acid~~, and combinations thereof; and
optionally, at least one hydrogen halide scavenger.
2. (Cancelled)
- 15 3. (Currently Amended) The thermoplastic vulcanizate elastomer of
claim 1, wherein the at least one phenolic resin comprises methylol groups.
4. (Cancelled)
- 20 5. (Cancelled)
6. (Cancelled)
- 25 7. (Cancelled)
8. (Cancelled)

9. (Currently Amended) A process for making a thermoplastic elastomer vulcanizate comprising polypropylene and EPDM, the process comprising:

- (a) providing a catalyst system;
- 5 (b) providing at least one thermoplastic polymer comprising polypropylene or precursors for at least one thermoplastic polymer comprising polypropylene;
- (c) providing at least one uncured elastomer comprising EPDM;
- (d) mixing components of the catalyst system, simultaneously or
10 sequentially, with the uncured elastomer; and
- (e) heating the uncured elastomer in the presence of the catalyst system to cure the uncured elastomer and to form the thermoplastic vulcanizate elastomer,
- wherein the catalyst system comprises:
- 15 (1) at least one non-brominated phenolic resin;
- (2) at least one non-transition metal halide wherein the halide comprises magnesium chloride, calcium chloride, sodium chloride, potassium chloride, or combinations thereof;
- (3) at least one acid selected from the group consisting of oxalic acid,
20 citric acid, ~~stearic acid~~, and combinations thereof; and optionally,
- (4) at least one hydrogen halide scavenger.

10. (Previously Presented) The process of claim 9, wherein the amount of the phenolic resin used is about 2 to about 10 percent by weight
25 based on total weight of the uncured elastomer.

11. (Previously Presented) The process of claim 9, wherein the thermoplastic elastomer is prepared using reactive extrusion.

12. (Previously Presented) The process of Claim 9, wherein the amount of the halide used is about 2 to about 8 percent by weight based on total weight of the uncured elastomer.

- 5 13. (Previously Presented) The process of Claim 9, wherein the amount of the acid used is about 1 to about 5 percent by weight based on total weight of the uncured elastomer.